rMPP meeting on MD2 2023 approval

The meeting took place on Wednesday, **September 6th, 2023, 9.30h-10.30h,** via zoom.

Participants:
X. Buffat, D. Butti, Y. Dutheil, L. Giacomel, C. Hernalsteens, G. Iadarola, S. Johannesson, B. E. Karlsen-Baeck, L. Mether, N. Mounet, K. Paraschou, B. Salvachua Ferrando, M. Solfaroli Camillocci, J. Uythoven, G. Trad, J. Wenninger, C. Wiesner, D. Wollmann

The slides of all presentations can be found on Indico. The MD procedures can be found on ASM.

1 Introduction

J. Uythoven welcomed the participants. He explained that, prior to the meeting, rMPP members had reviewed the MD procedures and selected two MDs to be presented in more detail. Furthermore, comments to two additional MDs will be given and discussed.

2 rMPP comments on MDs

The initial comments and questions can be found here. The following remarks and clarifications were given in the meeting:

- MD9405: Instability Growth Rate at Injection 2023
  - It should be clearly defined in the MD procedure which collimators will be moved and to which positions, as well as the interlocks, including collimator and BLM interlocks, that are foreseen to be masked. In addition, the recovery and roll-back after the MD should be explicitly mentioned in the procedure, including the masked interlocks**. L. Giacomel agreed to updating the procedure accordingly.**
- MD9523: Threshold of longitudinal loss of Landau damping
  - C. Wiesner asked about the maximum number of bunches foreseen. B. E. Karlsen-Baeck replied that the plan is using a certain number of individual bunches that will be kicked at the same time. He clarified that they can be spread out in the ring. J. Uythoven remarked that for the VdM scan four bunches per injection are used. G. Iadarola added that the injectors are currently assuming the injection of single individual bunches for this MD. He recommended to stick to this planning unless there is a strong reason for multiple bunches per injection. **B. E. Karlsen-Baeck confirmed that using single bunches per injection is fine for the MD. He agreed to update the procedure accordingly.**
  - J. Wenninger asked about the maximum bunch intensity. B. E. Karlsen-Baeck replied that intensities from 5e9 p+ to 2.4e11 p+ are foreseen. He explained that the maximum intensity of 2.4e11 p+ is given by the ADT interlock limit. C. Wiesner reminded ensuring the ADT experts availability.

The MDs were approved understanding that the comments and modifications above will be included in the procedures.

3 MD9552: Beam stability and incoherent effects with trains at injection (K. Paraschou, L. Mether)

- K. Paraschou detailed that a fill during the MD would consist in a) inject 12b+3x48b+3x48b, b) wait for emittance growth and tail population to evolve, c) scrape beam with TCP collimators. The phase knob would need to be set to either 0 or 1 during the waiting period. J. Uythoven asked if both configurations are needed. K. Paraschou confirmed that two fills with phase knob 0 and two fills with phase knob 1 are planned.
- J. Wenninger commented that using two different hypercycles can be tedious from the operational point of view. He remarked that this change of hypercycle was never done at high intensity. G. Iadarola added that the alternative would be to open the PC interlock limits.
- J. Wenninger and M. Solfaroli Camillocci stressed that the PC interlock limits should not be touched. M. Solfaroli Camillocci stated that switching hypercycle once without beam is deemed acceptable. **G. Iadarola summarized that the preferred scenario would be to perform two fills with one phase knob configuration, change hypercycle, then perform two fills with the other phase knob configuration before switching back to the nominal cycle before the next MD. It was agreed that this procedure is acceptable. K. Paraschou will add this to the MD procedure.**
- M. Solfaroli Camillocci asked, in view of the current TDIS limitation, what the minimum required intensity for the MD would be. K. Paraschou replied that 2x48b would still be acceptable.
- J. Uythoven asked about the procedure for the scraping. **K. Paraschou replied that the standard collimation scraping procedure should be used. He will verify the exact procedure, including the numbers of beam sigma to be scraped. He will then update the MD procedure accordingly.**

The MD was approved understanding that the comments and modifications above will be included in the procedure.

4 MD10303: Characterization of the BSRH (Coronagraph) (D. Butti)

- D. Butti clarified that the MD requesters now decided staying below setup beam intensity (two nominal plus a few pilot bunches).
- D. Butti mentioned that the beam should be scraped down to 2.5 sigma, which is possible with setup beam intensity. **D. Wollmann stressed that this implies opening the inner collimator limits, which should be explicitly mentioned in the procedure.**
- **B. Salvachua Ferrando commented that, for the scraping, the collimator position in millimetres should also be added to the MD procedure.**
- N. Mounet suggested to use high octupole settings to avoid instabilities.
- Only Beam 2 is required for the MD. J. Wenninger recommended to, nevertheless, put at least one nominal bunch in Beam 1 to avoid unexpected operational issues.

The MD was approved understanding that the comments and modifications above will be included in the procedure.

J. Uythoven underlined that some flexibility is required given the dynamic situation for the MD planning. He thanked all speakers and participants and closed the meeting.